REMARKS/ARGUMENTS

The present amendment is responsive to the Office Action dated August 5, 2005. A petition for a three month extension of time is submitted along with a Request for Continued Examination. Claims 3, 4 and 8 have been amended. No new matter has been introduced by these amendments and new claims. Support for the amendments may be found, for example, at pages 10-15 of the instant application. Claims 1 and 5-7 were previously cancelled. Claims 2-4 and 8-10 are thus presented for the Examiner's consideration in view of the following remarks.

Reexamination and reconsideration of the above-identified application, pursuant to and consistent with 37 C.F.R. § 1.116, and in light of the amendments and remarks that follow, are respectfully requested. Because the present claims are believed to be in condition for allowance over the cited art, good cause exists for the entry of this amendment in accordance with 37 C.F.R. § 1.116.

As an initial matter, the Office Action indicates that only claims 3-4 and 8-10 are pending in the application. Only these claims are addressed in the rejections. However, applicants would respectfully point out that claim 2, which was amended in the previous response dated June 7, 2005, was never cancelled and is still pending in the instant application. (*See* June 7, 2005 response, pgs. 2, 5 and 8.) Claim 2 depends from currently pending claim 8. Thus, applicants respectfully request that claim 2 be addressed in the next Office communication.

Claim 4 was objected to because of apparent informalities in the preamble. Applicants have amended the preamble to recite "A computer readable storage medium storing a computer program for causing a digital video signal processing

6

apparatus to execute a decoding operation, the program comprising." The amendment has been made in order to address the alleged informalities and is unrelated to patentability. Any changes made do not narrow the scope of the claims. In view of the amendment, applicants respectfully request that the objection of claim 4 be withdrawn.

Claims 3-4 and 8-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,008,849 ("*Frencken*") in view of U.S. Patent No. 6,201,536 ("*Hendricks*"). As noted above, claim 2 was not addressed in the Office Action. Applicants respectfully traverse the rejection. As will be explained in detail below, neither *Frencken*, *Hendricks* nor the other art of record teach or otherwise suggest all of the limitations of independent claims 3, 4 and 8.

Independent claims 3 and 4 each recites "storing the decoded digital video signal in a buffer as data corresponding to the plurality of frames" and independent claim 8 recites "buffer means for storing the decoded digital video signal as data corresponding to the plurality of frames." The Office Action contends that FIG. 10(b) of *Frencken* shows that the *Frencken* invention utilizes a buffer to store a plurality of decoded frames. (*See* Office Action, numbered paragraph 4, pgs. 3-4.) However, FIG. 10(b), which represents "pictures displayed in their natural order (and, as stated above, with a temporal shift of one field with respect to the decoded pictures)", does not support this contention. (Col. 8, ll. 58-60.)

As discussed in the previous amendment, *Frencken* '849 discloses a two-step MPEG decoding process. (*See* Abstract.) Specifically:

> The step of decoding and the step of display are subdivided into two sub-steps of decoding signals corresponding to each field and into two sub-steps of displaying these fields, and each of these sub-steps of decoding a field immediately precedes each

sub-step of displaying this field and is effected at
the same rate, <u>without any buffer storage during the
storage step which precedes the display step</u>. With
this absence of storage in the display memory, the
operation can be termed as "decoding-on-the-fly".

(Col. 9, line 61 to col. 10, line 3, emphasis
added.)

Furthermore, *Frencken* '849 teaches away from what is
claimed in independent claims 3, 4 and 8 as "[t]he principle of
the invention is <u>no longer to store the decoded information
components relating to pictures B in the display memory</u>, but to
decode the coded information components corresponding to these
pictures exactly at the instant when the resultant decoded
information components must be available for display, in
accordance with a principle referred to as decoding-on-the-fly."
(Col. 9, lns. 28-36, emphasis added.)

In addition, *Frencken* '849 does not disclose other
elements of independent claims 3, 4 or 8. By way of example
only, while *Frencken* '849 does teach storing an encoded video
signal in a FIFO memory <u>prior to</u> decoding, it does not teach or
suggest storing management data indicating an output order of
the plurality of decoded frames in a FIFO format, as required by
independent claims 3 or 4, or a FIFO means for storing
management data indicating an output order of the plurality of
decoded frames, as required by independent claim 8. The on-the-
fly decoding process of *Frencken* '849 does not operate in this
manner and there is no teaching or suggestion to do so.

Claims 3, 4 and 8 also recite "wherein if the decoding
operation on the encoded digital video signal is not completed
within one frame period, the decoding operation is continued in
the following frame period." The Office Action states "this
limitation is inherently included since the encoded digital
video signal contains more than 1 frame ... and because the
encoded video signal contains more than 1 frame, the decoding

8

operation on the encoded digital video signal is not completed within one frame period, then it has to continue in the following frame period." (Office Action, numbered paragraph 4, pg. 3.)

Applicants respectfully submit that this inherency argument is not correct. In the "Background Art" section of the instant application, it is explained that in the "case of decoding the digital video data by a software process, it is necessary to successively execute a plurality of processes which are necessary for decoding. To output in a real-time matter, it is necessary to complete all of the processes necessary for decoding within a time which is matched with a period that is required for output. For example, in case of thee NTSC system, since a frame rate is equal to 30 frames/sec, one period is equal to 33.36 msec. It is, therefore, necessary to decode the digital video data of one frame within 33.36 msec." (Application, pg. 2, ll. 8-19.) "Therefore, in case of decoding by the software process by using a personal computer, when the decoding process cannot be performed within an output period, the process of a part of data is skipped and an output is decimated, thereby maintaining real-time performance." (Application, pg. 3, ll. 9-14.) Thus it is not accurate to state that the decoding process "has to continue in the following frame period" and neither *Frencken* nor *Hendricks* teaches or suggests operating in the claimed manner.

Claims 3 and 4 also recite "storing management data in a FIFO format, the management data indicating an output order of the plurality of frames." Claim 8 recites "FIFO means for storing management data indicating an output order of the plurality of frames."

The Office Action admits that *Frencken* does not "particularly disclose" such limitations. (*See* Office Action, numbered paragraph 4, pg. 3.) While the Office Action relies on

Hendricks to overcome other admitted deficiencies in *Frencken*, there is no discussion that *Hendricks* overcomes the deficiencies of *Frencken* with regard to the aforementioned claim elements. Instead, FIG. 10(b) is again discussed. "Since fig. 10(a) shows a sequence of pictures to be decoded and fig. 10(b) shows pictures to be displayed and these two picture are different. Therefore, it would have been obvious that there has to be a management data indicating an output order of the plurality of frames to be displayed so they can be arranged as such and it would also have been obvious that the order of displayed would have been used instead of shuffling memory buffer around and also, *Frencken* et al does teach FIFO format (col. 7, ln. 33-36)." (Office Action, numbered paragraph 4, pg. 4.)

Applicants respectfully disagree. As discussed above, FIG. 10(b) illustrates "pictures displayed in their natural order." With regard to the section relied on for FIFO format, *Frencken* states "These coded input data are applied to the memory 110 which is a part of the storage sub-assembly 20 and in this case is of the FIFO type (First In, First Out: the data written first are also read first)." (Col. 7, ll. 33-36.) *Frencken* goes on to state "FIG. 4 is a temporal diagram showing, for each picture, the process of storage in this FIFO memory (die picture whose storage takes place is signalized at the end of the slope illustrating the progression of this storage operation). Each picture may then be decoded. To satisfy the MPE; standard requirements for bitrate control, all the data relating to a picture should theoretical be present in the memory at the instant when the decoder treats this image. This is illustrated in FIG. 5 which shows the temporal position of decoding, picture by picture, with respect to <u>storage of the same pictures in the FIFO memory</u> (decoding does not start until storage is terminated)." (Col. 7, ll. 36-47, emphasis added.)

While *Frencken* states that the encoded pictures are stored in the FIFO memory, it does not teach or otherwise suggest storing management data in a FIFO memory, with the management data indicating an output order of the plurality of frames that are stored in buffers as in the claimed invention. In fact, *Frencken's* storing of the pictures in the FIFO teaches away from the use and storage of management data as claimed, because according to *Frencken* the pictures in the FIFO "written first are also read first." Thus, per *Frencken*, there would be no need to indicate "an output order of the plurality of frames to be displayed so they can be arranged as such" as suggested by the Office Action because such an order would be set by the order of storage in the FIFO.

Notwithstanding the aforementioned deficiencies of *Frencken* and *Hendricks*, the independent claims have been amended to further clarify the claimed inventions and present additional features that *Frencken*, *Hendricks* and the other art of record, either singly or in combination, do not teach or otherwise suggest.

Claims 3 and 4 have been amended to include "inputting an encoded digital video signal and an encoded digital audio signal; accessing a decoding program for decoding the encoded digital video signal and the encoded digital audio signal from a program memory; executing the decoding program to decode the encoded digital video signal and the encoded digital audio signal in a decoding operation to thereby generate a decoded digital video signal and a decoded digital audio signal as a plurality of frames ... controlling the decoding operation based on the output order of the plurality of frames; wherein decoding of the encoded digital audio signal is set to a higher priority than decoding of the encoded digital video signal."

Claim 8 has been amended to include "means for inputting an encoded digital video signal and an encoded digital

11

audio signal; means for storing a decoding program for decoding the encoded digital video signal and the encoded digital audio signal; processing means operable to execute the stored decoding program to decode the encoded digital video signal and the encoded digital audio signal supplied from the inputting means and to generate a decoded digital video signal and a decoded digital audio signal as a plurality of frames in a decoding operation ... and management means for controlling the decoding operation of the processing means based on the output order of the plurality of frames; wherein the decoding for the encoded digital audio signal is set to a higher priority than the decoding for the encoded digital video signal."

Frencken, Hendricks, and the other references of record neither disclose nor suggest, either alone or in combination, the aforementioned limitations present in the pending independent claims. Therefore, for at least these reasons, applicants respectfully submit that independent claims 3, 4 and 8 are in condition for allowance.

In addition, claims 2, 9 and 10 depend from independent claim 8 and contain all the limitations thereof, as well as other features that are neither disclosed nor suggested by the art of record. In view of the above, applicants respectfully submit that dependent claims 2, 9 and 10 are also in condition for allowance.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.
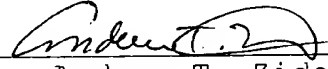
If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.   If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: January 31, 2006   Respectfully submitted,

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13